

Paper Reference 31760H

Pearson BTEC

Level 3 Nationals

Extended Certificate,

Foundation

Diploma, Diploma, Extended Diploma

Total Marks

INFORMATION TECHNOLOGY

**UNIT 1: INFORMATION TECHNOLOGY
SYSTEMS**

Monday 21 January 2019 – Morning

**Time: 2 hours (plus your additional
time allowance)**

**In the boxes below, write your name, centre
number and learner registration number.**

Surname							
Other names							
Centre Number							
Learner Registration Number							

Y54089RA



Pearson

ITEMS INCLUDED WITH QUESTION PAPER

- A separate Data Booklet.

INSTRUCTIONS

- Use **BLACK** ink, **BLACK** ball – point pen, **BLACK** felt tip or your usual method.
- Write your name, centre number and learner registration number on the front cover.
- Answer **ALL** questions.
- Answer the questions in the spaces provided in this Question Paper or in the Data Booklet – **THERE MAY BE MORE SPACE THAN YOU NEED.**

INFORMATION

- Total mark for this paper is 90.
- The marks for **EACH** question are shown in brackets – **USE THIS AS A GUIDE AS TO HOW MUCH TIME TO SPEND ON EACH QUESTION.**

ADVICE

- **Read each question carefully before you start to answer it.**
 - **Try to answer every question.**
 - **Check your answers if you have time at the end.**
-

ANSWER ALL QUESTIONS.

WRITE YOUR ANSWERS IN THE SPACES PROVIDED.

- 1. Joseph is a student in the final year of a three – year graphic arts course. At the beginning of his course he was given a second – hand laptop to use when completing college assignments. The laptop is now five years old and Joseph is thinking of replacing it. The operating system on the laptop is no longer supported by the manufacturer, which may cause security issues.**

continued on the next page . . .

1. (a) Explain TWO security issues that may arise from using an unsupported operating system. (4 marks)

SECURITY ISSUE 1 _____

SECURITY ISSUE 2

1. (b) is on the next page.

Turn over

1. (b) Explain TWO issues, other than security, that may arise from using a five – year – old laptop.
(4 marks)

ISSUE 1 _____

ISSUE 2

1. (c) is on the next page.

Turn over

1. (c) Joseph has decided to replace the laptop with a new '2 – in – 1 laptop'. This will combine the functionality of a standard laptop and a tablet computer.

Joseph has decided to buy a computer with a pre – installed open source operating system, rather than one with a proprietary operating system.

1. (c) (i) is on the next page.

1. (c) (i) Explain TWO benefits, OTHER than the initial cost, of using an open source operating system.

(4 marks)

BENEFIT 1 _____

Turn over

BENEFIT 2 _____

1. (c) (ii) is on the next page.

Turn over

1. (c) (ii) Explain TWO drawbacks of using an open source operating system.

(4 marks)

DRAWBACK 1 _____

DRAWBACK 2 _____

Turn over

1. (d) The '2 – in – 1 laptop' has a Graphical User Interface (GUI) similar to a tablet computer.

Discuss the factors that make a GUI suitable for use in mobile devices such as tablet computers.

(6 marks)

15

(TOTAL FOR QUESTION 1 = 22 MARKS)

Turn over

- 2. Maria is a scientist working as part of a team studying the British weather.**

An unmanned data logging system has been set up in the mountains of Scotland to monitor weather conditions such as temperature and rainfall.

- (a) Explain what is meant by the term 'data logging'.**

(2 marks)

Turn over

-
-
-
-
2. (b) Explain TWO benefits of using a data logging system to monitor weather conditions in a remote area.
- (4 marks)

BENEFIT 1 _____

Turn over

[illegible]

2. (c) Describe how a data logging system would be used to monitor weather conditions.

(6 marks)

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Turn over

2. (d) is on the next page.

2. (d) Until recently Maria has collected the data by visiting the weather station.

Due to improvements in communication technology, Maria no longer needs to visit the weather station.

Explain TWO ways in which improvements in communication technology have removed the need to visit the weather station.

(4 marks)

WAY 1 _____

Turn over

WAY 2

2. (e) When Maria receives the data from the weather station she needs to:

- **analyse the data**
- **display the results in an appropriate format**
- **produce a report for the other scientists working in the team.**

She has decided to use spreadsheet and word processing software to complete these tasks.

Discuss how the features of spreadsheet and word processing software would help Maria complete these tasks.

(6 marks)

(TOTAL FOR QUESTION 2 = 22 MARKS)

- 3. Lakesuites Estate Agency sells properties in the Lake District. There is a head office with a small number of PCs linked to a network server. The network is backed up using a cloud storage system.**

Agents visit prospective sellers to gather information about properties. Agents use an online form to enter property details into a tablet computer. These forms are then submitted to head office using a virtual private network (VPN).

Sales packs are created for each property, these packs are available online for prospective buyers to view.

Head office staff contact sellers and buyers via email.

continued on the next page . . .

Details of all properties and personal details of sellers and buyers are stored on the agency's server at head office.

- 3. (a) On the blank space provided for Question 3 (a) in the separate Data Booklet, draw a diagram to show the integration of systems used by Lakesuites Estate Agency.**

The diagram should include:

- devices and systems that could be used**
 - devices to be connected and the connection type(s) used**
 - the flow of data through the system**
 - annotations indicating the information and data to be passed between systems, devices and users.**
- (6 marks)**

Turn over

3. (b) Agents gather information about properties from sellers and use tablet computers to enter property details into an online form.

Explain THREE factors that the agency should consider when setting up the online form.

(6 marks)

FACTOR 1 _____

FACTOR 2

FACTOR 3

Turn over

3. (c) is on the next page.

Turn over

3. (c) The online sales pack for each property includes:

- **PDF documents giving details such as location, floor plans and energy ratings**
- **photographs**
- **a virtual tour video.**

(i) Describe the use and implications of codecs when using video in digital format.

(4 marks)

Turn over

3. (c) (ii) Discuss the factors that should be considered when making the sales packs available online.

(8 marks)

Turn over

(TOTAL FOR QUESTION 3 = 24 MARKS)

- 4. Sebourne Community Centre has a main office and meeting rooms used by members of the community for a wide variety of activities.**

There is a Local Area Network (LAN) serving all areas of the centre.

There is a mix of both PCs and laptop computers and they are all connected to the LAN using Ethernet cables.

The computers vary in age and specification, many having been donated by members over the years.

The centre has been given a grant to replace the computer system.

It is considering replacing the system with wireless enabled laptops.

continued on the next page.

4. (a) Analyse the implications of replacing the existing computers with wireless enabled laptops.
(10 marks)

4. (b) The centre has decided to go ahead with the replacement of the computer system and needs to dispose of the old system. The members are aware that there are moral, ethical and legal factors that should be considered. Analyse the factors that should be considered when disposing of the old system.

(12 marks)

Turn over

TOTAL FOR PAPER = 90 MARKS